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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,766	07/27/2001	Hyun-Sook Kang	Q63182	7463

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SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

DANIEL JR, WILLIE J

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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09/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/915,766

Applicant(s)

KANG ET AL.

Examiner

WILLIE J. DANIEL JR

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is in response to applicant's communication filed on 05 November 2005. In view of the decision by the BPAI mailed on 05 March 2008, prosecution is hereby reopened.

Claims 1-10 are now pending in the present application. This office action is made **Non-Final**.

2. Brief Description of Contention Free Period

A data transmission band is divided into a Contention Free Period (CFP) and a Contention Period (CP). The CFP is a **reserved period** for transmitting/receiving real time data, such as audio and video, with a high data transmission rate. (for above paragraph - see instant application, section description of the related art, pg. 2, lines 13 et seq.)

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Zimmerman et al.**

(hereinafter Zimmerman) (**US 6,785,252 B1**) with evidentiary support by **Kumar et al.**

(hereinafter Kumar) (**US 6,597,919 B1**).

Regarding **claim 1**, Zimmerman discloses a method for allocating bandwidth in a wireless local area network having an access point (e.g., base station 106) and at least one wireless communication terminal (e.g., CPE) (see col. 5, lines 15-27; col. 6, lines 23-29; col. 14, lines 50-59; col. 30, lines 4-10), *where the base station may allocate 1000 units of bandwidth*, comprising the steps of:

(a) the access point (e.g., base station 106) allocating a fixed bandwidth to said at least one wireless communication terminal (e.g., CPE) (see col. 11, lines 43-58; col. 12, lines 29-38), where the base station may allocate 1000 units of bandwidth (see col. 5, lines 15-27);

(b) receiving a transmission rate (e.g., information rate) corresponding to a desired contention free period (e.g., bandwidth requested or reserved) of data to be transceived from said at least one wireless communication terminal (e.g., CPE) (see col. 2, lines 25-31; col. 11, lines 43-58; col. 12, lines 29-38; col. 15, lines 49-58; Figs. 4-7 and related text), where the

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CPE can request for (or reserve) additional bandwidth to be allocated by base station allocate (see col. 13, lines 19-23; col. 30, lines 4-10; Fig. 11 “ref. 952”); and

(c) adjusting a rate of contention free period (e.g., bandwidth requested or reserved) occupancy (e.g., time periods or time slots) of said at least one wireless communication terminal (e.g., CPE) in the fixed bandwidth, based on the received transmission rate (e.g., information rate) (see col. 15, lines 49-58; col. 5, lines 15-27; col. 14, lines 50-60; col. 26, lines 5-16,40-52; col. 30, lines 4-10; Figs. 4-7 and related text), where the base stations (106) maintain sub-frame maps of the bandwidth and a frame is defined as comprising N consecutive time periods or time slots (see col. 10, lines 9-11,15-25). For example, frame is an adaptive frame of 800 PS (1 millisecond duration) (see col. 10, lines 37-45,49-51,55-56; col. 14, lines 50-60; col. 6, lines 23-27; Fig. 2), where CPE(1) to CPE(n) request slots (PS) and the system adjusts and allocates based on available bandwidth and bandwidth demand in which the CPE occupy the reserved bandwidth (e.g., time slots) for a duration of the communication session.

As further support of Zimmerman disclosing of the claim feature a transmission rate (e.g., information rate) (see col. 2, lines 25-31), Kumar at the least explicitly discloses “...committed **information rate** requires a user to pre-commit to a certain average maximum data **transmission rate** for the duration of the communication session. The **information rate** refers to the average maximum **transmission speed**...” (see Kumar - col. 1, lines 43 et seq.).

Regarding **claim 2**, Zimmerman discloses the method of claim 1, wherein the data is real time data (see col. 10, lines 4-7; col. 23, lines 29-31).

Regarding **claim 3**, the combination of Zimmerman and Watanabe discloses every limitation claimed, as applied above (see claim 1), in addition Zimmerman further discloses the method of claim 1, wherein in the step (a), the fixed bandwidth is a sum of the Contention Free Period for real time data transmitting/receiving, and a Contention Period for non-real time data transmitting/receiving (see col. 5, lines 15-27; Figs. 2, 4, & 7), where the base station may allocate 1000 units of bandwidth and an additional 500 units of bandwidth are requested or reserved (see col. 6, lines 23-29) and a frame is adaptive (see col. 10, lines 52-54; col. 27, lines 45-52; Fig. 2). For example, the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. Another example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see col. 13, lines 7-13, 19-23; Figs. 2 & 4), where the CPEs are allocated bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.

Regarding **claim 4**, Zimmerman discloses the method of claim 1, wherein in the step (b), the transmission rate (e.g., information rate) received from said at least one wireless communication terminal comprises a data packet length and a data transmission speed (see col. 5, lines 20-24; col. 15, lines 49-58; col. 30, lines 4-10; Figs. 2, 4, & 7).

Regarding **claim 5**, the combination of Zimmerman and Watanabe discloses every limitation claimed, as applied above (see claim 1), in addition Zimmerman further discloses the method of claim 1, wherein the step (c) comprises the steps of:

calculating (see col. 5, lines 24-27) a Contention Free Period occupancy requested by said at least one wireless communication terminal (see col. 2, lines 25-31; col. 11, lines 43-

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58; col. 12, lines 29-38; col. 15, lines 49-58; Figs. 4-7 and related text), where the CPE can request for (or reserve) additional bandwidth to be allocated by base station allocate (see col. 13, lines 19-23; col. 30, lines 4-10; Fig. 11 "ref. 952"). For example, the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. Another example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see col. 13, lines 7-13,19-23; Figs. 2 & 4), where the CPEs are allocated bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.;

accepting the Contention Free Period occupancy as a current Contention Free Period occupancy, if the Contention Free Period occupancy requested by said at least one wireless communication terminal does not exceed a Contention Free Period occupancy limit (see col. 10, lines 15-20,35-54; col. 15, lines 49-58; col. 14, lines 50-59; col. 7, lines 54-57; Figs. 2 & 4-7), where the bandwidth is adaptive and dynamic according to availability and services; and

associating said at least one wireless communication terminal to the Access Point after adjusting a ratio of the Contention Free Period to Contention Period, if a sum of the current Contention Free Period occupancy is less than a maximum Contention Free Period (see col. 15, lines 49-58; col. 14, lines 50-59; Figs. 2 & 4-7), where the frame is adaptive (see col. 10, lines 52-54; Fig. 2). For example, the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. Another example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see col. 13, lines 7-13,19-23; Figs. 2 & 4), where the CPEs are allocated

bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.

Regarding **claim 6**, Zimmerman discloses an apparatus for allocating bandwidth in a wireless local area network, including at least one wireless communication terminal (see col. 5, lines 15-27; col. 6, lines 23-29; col. 14, lines 50-59; col. 30, lines 4-10), comprising:

bandwidth fixing means (e.g., base station 106) for fixing bandwidth to be allocated to said at least one wireless communication terminal (see col. 11, lines 43-58; col. 12, lines 29-38), where the base station may allocate 1000 units of bandwidth (see col. 5, lines 15-27);

transmission rate receiving means (e.g., base station 106) for receiving a transmission rate of said at least one wireless communication terminal from said at least one wireless communication terminal, if said at least one wireless communication terminal is intended for a data transmission through a contention free period (see col. 2, lines 25-31; col. 11, lines 43-58; col. 12, lines 29-38; col. 15, lines 49-58; Figs. 4-7 and related text), where the CPE can request for (or reserve) additional bandwidth to be allocated by base station allocate (see col. 13, lines 19-23; col. 30, lines 4-10; Fig. 11 "ref. 952"); and

period adjusting means (e.g., 106; see col. 5, lines 24-27) for adjusting a rate of a contention free period occupancy of said at least one wireless communication terminal in the bandwidth, based on the received transmission rate (see col. 15, lines 49-58; col. 5, lines 15-27; col. 14, lines 50-60; col. 26, lines 5-16,40-52; col. 30, lines 4-10; Figs. 4-7 and related text), where the base stations (106) maintain sub-frame maps of the bandwidth and a frame is defined as comprising N consecutive time periods or time slots (see col. 10, lines 9-11,15-25). For example, frame is an adaptive frame of 800 PS (1 millisecond duration) (see col. 10,

lines 37-45,49-51,55-56; col. 14, lines 50-60; col. 6, lines 23-27; Fig. 2), where CPE(1) to CPE(n) request slots (PS) and the system adjusts and allocates based on available bandwidth and bandwidth demand in which the CPE occupy the reserved bandwidth (e.g., time slots) for a duration of the communication session..

As further support of Zimmerman disclosing of the claim feature a transmission rate (e.g., information rate) (see col. 2, lines 25-31), Kumar at the least explicitly discloses "...committed **information rate** requires a user to pre-commit to a certain average maximum data **transmission rate** for the duration of the communication session. The **information rate** refers to the average maximum **transmission speed**..." (see Kumar - col. 1, lines 43 et seq.).

Regarding **claim 7**, Zimmerman discloses the apparatus of claim 6, wherein the data is real time data (see col. 10, lines 4-7; col. 23, lines 29-31).

Regarding **claim 8**, the combination of Zimmerman and Watanabe discloses every limitation claimed, as applied above (see claim 6), in addition Zimmerman further discloses the apparatus of claim 6, wherein the bandwidth is a sum of the Contention Free Period for real time data transmitting/receiving, and a Contention Period for non-real time data transmitting/receiving (see col. 5, lines 15-27; Figs. 2, 4, & 7), where the base station may allocate 1000 units of bandwidth and an additional 500 units of bandwidth are requested or reserved (see col. 6, lines 23-29) and a frame is adaptive (see col. 10, lines 52-54; Fig. 2). For example, the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. Another example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see

col. 13, lines 7-13,19-23; Figs. 2 & 4), where the CPEs are allocated bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.

Regarding **claim 9**, Zimmerman discloses the apparatus of claim 1, wherein the transmission rate (e.g., information rate) received from said at least one wireless communication terminal comprises a data packet length and a data transmission speed (see col. 5, lines 20-24; col. 15, lines 49-58; col. 30, lines 4-10; Figs. 2, 4, & 7).

Regarding **claim 10**, Zimmerman discloses the apparatus of claim 1, wherein the period adjusting means comprises the steps of:

calculating means (e.g., base station 106) for calculating the Contention Free Period occupancy requested by said at least one wireless communication terminal, based on the received transmission rate (e.g., information rate) (see col. 2, lines 25-31; col. 11, lines 43-58; col. 12, lines 29-38; col. 15, lines 49-58; Figs. 4-7 and related text), where the CPE can request for (or reserve) additional bandwidth to be allocated by base station (see col. 13, lines 19-23; col. 30, lines 4-10; Fig. 11 "ref. 952"). For example, the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. Another example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see col. 13, lines 7-13,19-23; Figs. 2 & 4), where the CPEs are allocated bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.;

accepting means (e.g., base station 106) for accepting the requested Contention Free Period occupancy as a current Contention Free Period occupancy, if the Contention Free Period occupancy requested by said at least one wireless communication terminal does not

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exceed a Contention Free Period occupancy limit (see col. 15, lines 49-58; col. 14, lines 50-59; Figs. 2 & 4-7); and

associating means (e.g., base station 106) for associating the terminal to an Access Point (e.g., base station 106) after adjusting a ratio of the Contention Free Period to Contention Period, if a sum of the current Contention Free Period occupancy is less than a maximum Contention Free Period (see col. 15, lines 49-58; col. 14, lines 50-59; Figs. 2 & 4-7), where the frame is adaptive (see col. 10, lines 52-56; Figs. 2 & 4), where the frame includes uplink and downlink sub-frames that are allocated and vary over time. For example, uplink sub-frame includes contention slots and reserved (or scheduled) slots (see col. 13, lines 7-13, 19-23; Figs. 2 & 4), where the CPEs are allocated bandwidth of the uplink sub-frame that is dynamically adjusted between uplink and downlink demand.

Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by **Watanabe et al.** (hereinafter Watanabe) (**US 6,791,996 B1**).

Regarding **claim 1**, Watanabe discloses a method for allocating bandwidth (e.g., time-slots) in a wireless local area network (e.g., 802.11) having an access point (e.g., control station 1) and at least one wireless communication terminal (e.g., communication stations 2-6) (see col. 4, lines 53-58; col. 1, lines 19-29; Fig. 1), comprising the steps of:

(a) the access point (1) allocating a fixed bandwidth (e.g., time-slots) to said at least one wireless communication terminal (2) (see col. 5, lines 22-24, 42-51; Fig. 1), where the control station (1) allots time-slots to a communication station (2);

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(b) receiving a transmission rate corresponding to a desired contention free period (e.g., 21) of data to be transceived from said at least one wireless communication terminal (2) (see col. 6, lines 66 - col. 7, line 30; Fig. 2 "ref. 21" and related text), where the system provides communication station (2) a transmission rate (e.g., 5 megabits per second) for the contention-free period; and

(c) adjusting a rate of contention free period (e.g., 21) occupancy (e.g., duration or period) of said at least one wireless communication terminal (e.g., 2) in the fixed bandwidth, based on the received transmission rate (see col. 5, lines 3-8, 47-51; col. 6, lines 66 - col. 7, line 26; col. 7, lines 41-45; Figs. 2 & 7 and related text), where the contention free *period* has a maximum length and can be adjusted according to the number of communication stations participating (e.g., communicating / transmitting) within the *time-frame*, for example, the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second).

Regarding **claim 2**, Watanabe discloses the method of claim 1, wherein the data is real time data (e.g., synchronous data such as audio and video) (see col. 2, lines 23-26; col. 1, lines 30-37).

Regarding **claim 3**, Watanabe discloses the method of claim 1, wherein in the step (a), the fixed bandwidth is a sum of the Contention Free Period (21) for real time data (e.g., synchronous data such as audio and video) transmitting/receiving, and a Contention Period (22) for non-real time data (e.g., asynchronous data) transmitting/receiving (see col. 2, lines

23-26; col. 5, lines 7-21; col. 1, lines 30-37; Figs. 2 & 7), where the frame includes contention-free mode and contention mode.

Regarding **claim 4**, Watanabe discloses the method of claim 1, wherein in the step (b), the transmission rate received from said at least one wireless communication terminal (2) comprises a data packet length and a data transmission speed (e.g., 5 megabits per second) (see col. 5, lines 7-21; col. 6, lines 66 - col. 7, line 30; Figs. 2, 7, & 14 and related text), where the system provides a transmission rate for the contention-free period.

Regarding **claim 5**, Watanabe discloses the method of claim 1, wherein the step (c) comprises the steps of:

calculating a Contention Free Period occupancy (e.g., duration or period) requested by said at least one wireless communication terminal (2) (see col. 5, lines 3-8, 7-21, 47-51; col. 6, lines 66 - col. 7, line 26; col. 7, lines 41-45; Figs. 2 & 7 and related text), where the contention free *period* has a maximum length and can be adjusted according to the number of communication stations participating (e.g., communicating / transmitting) within the *time-frame*, for example, the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second);

accepting the Contention Free Period occupancy (e.g., duration or period) as a current Contention Free Period occupancy, if the Contention Free Period occupancy requested by said at least one wireless communication terminal (2) does not exceed a Contention Free Period occupancy limit (see col. 5, lines 3-24; col. 6, lines 66 - col. 7, line 30; Figs. 2 and 7), where the system allots time-slots of the contention free period; and

associating said at least one wireless communication terminal (2) to the Access Point (1) after adjusting a ratio of the Contention Free Period to Contention Period, if a sum of the current Contention Free Period occupancy is less than a maximum Contention Free Period (see col. 5, lines 3-24; col. 6, lines 66 - col. 7, line 30; Figs. 2 & 7), where the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second).

Regarding **claim 6**, Watanabe discloses an apparatus for allocating bandwidth (e.g., time-slots) in a wireless local area network (e.g., 802.11), including at least one wireless communication terminal (e.g., communication stations 2-6) (see col. 4, lines 53-58; col. 1, lines 19-29; Fig. 1), comprising the steps of:

bandwidth fixing means (e.g., control station 1) for fixing bandwidth (e.g., time-slots) to be allocated to said at least one wireless communication terminal (2) (see col. 5, lines 22-24, 42-51; Fig. 1), where the control station (1) allots time-slots to a communication station (2);

transmission rate receiving means (e.g., control station (1)) for receiving a transmission rate of said at least one wireless communication terminal (2) from said at least one wireless communication terminal (2), if said at least one wireless communication terminal (2) is intended for a data transmission through a contention free period (e.g., 21) (see col. 6, lines 66 - col. 7, line 30; Fig. 2 “ref. 21” and related text), where the system provides communication station (2) a transmission rate (e.g., 5 megabits per second) for the contention-free period; and

period adjusting means (e.g., control station 1) for adjusting a rate of contention free period (e.g., 21) occupancy (e.g., duration or period) of said at least one wireless communication terminal (e.g., 2) in the fixed bandwidth, based on the received transmission rate (see col. 5, lines 3-8, 47-51; col. 6, lines 66 - col. 7, line 26; col. 7, lines 41-45; Figs. 2 & 7 and related text), where the contention free *period* has a maximum length and can be adjusted according to the number of communication stations participating (e.g., communicating / transmitting) within the *time-frame*, for example, the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second).

Regarding **claim 7**, Watanabe discloses the apparatus of claim 6, wherein the data is real time data (e.g., synchronous data such as audio and video) (see col. 2, lines 23-26; col. 1, lines 30-37).

Regarding **claim 8**, Watanabe discloses the apparatus of claim 6, wherein the bandwidth is a sum of the Contention Free Period (21) for real time data (e.g., synchronous data such as audio and video) transmitting/receiving, and a Contention Period (22) for non-real time data (e.g., asynchronous data) transmitting/receiving (see col. 2, lines 23-26; col. 5, lines 7-21; col. 1, lines 30-37; Figs. 2 & 7), where the frame includes contention-free mode and contention mode.

Regarding **claim 9**, Watanabe discloses the apparatus of claim 6, wherein the transmission rate received from said at least one wireless communication terminal (2) is a data packet length and a data transmission speed (e.g., 5 megabits per second) (see col. 5,

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lines 7-21; col. 6, lines 66 - col. 7, line 30; Figs. 2, 7, & 14 and related text), where the system provides a transmission rate for the contention-free period.

Regarding **claim 10**, Watanabe discloses the apparatus of claim 6, wherein the period adjusting means comprises:

calculating means (e.g., control station 1) for calculating the Contention Free Period occupancy (e.g., duration or period) requested by said at least one wireless communication terminal (2), based on the received transmission rate (see col. 5, lines 3-8, 7-21, 47-51; col. 6, lines 66 - col. 7, line 26; col. 7, lines 41-45; Figs. 2 & 7 and related text), where the contention free *period* has a maximum length and can be adjusted according to the number of communication stations participating (e.g., communicating / transmitting) within the *time-frame*, for example, the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second);

accepting means (e.g., control station 1) for accepting the Contention Free Period occupancy (e.g., duration or period) as a current Contention Free Period occupancy, if the Contention Free Period occupancy requested by said at least one wireless communication terminal (2) does not exceed a Contention Free Period occupancy limit (see col. 5, lines 3-24; col. 6, lines 66 - col. 7, line 30; Figs. 2 and 7), where the system allots time-slots of the contention free period; and

associating means (e.g., control station 1) for associating the terminal (2) to an Access Point (1) after adjusting a ratio of the Contention Free Period to Contention Period, if a sum of the current Contention Free Period occupancy is less than a maximum Contention Free

Period (see col. 5, lines 3-24; col. 6, lines 66 - col. 7, line 30; Figs. 2 & 7), where the contention free *period* has a maximum length and can be adjusted according to the number of communication stations participating (e.g., communicating / transmitting) within the *time-frame*, for example, the system determines that for the contention free *period* (21) communication station (2) needs to occupy 5 *time-slots* of the communication period (23) to communicate at a transmission rate (e.g., 5 megabits per second).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Harry Newton, "Bandwidth", Newton's Telecom Dictionary, February 2000, Telecom Books, 16th ed., pg. 95.
- b. Harry Newton, "Transfer Rate", Newton's Telecom Dictionary, February 2000, Telecom Books, 16th ed., pg. 876.
- c. Harry Newton, "Transmission Speed", Newton's Telecom Dictionary, February 2000, Telecom Books, 16th ed., pg. 879.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIE J. DANIEL JR whose telephone number is (571)272-7907. The examiner can normally be reached on 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on (571) 272-7904. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information

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about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WJD,Jr/

WJD,Jr
13 August 2008



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